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10/643,216	08/19/2003	Hideo Yoshihara	116892	3202

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EXAMINER	
MARINI, MATTHEW G	
ART UNIT	**PAPER NUMBER**
2854	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/643,216	YOSHIHARA ET AL.	
	Examiner	Art Unit	
	Matthew G. Marini	2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 2/20/07.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-25 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-25 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

The indicated allowability of claims 7-14 and 20-25 are withdrawn in view of the newly discovered reference(s) to Taki (5,887,226), Ichinokawa et al. (5,452,072), and Kida et al. (6,173,132). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Taki (5,887,226).

As for claim 15, Taki teaches in Figs. 3 and 4, an image forming device, 1, comprising: a main casing, 2c, having a first surface, 74, and a second surface, 70, opposing the first surface, 74; a processing unit, 30, that is detachably mounted in the main casing, 2c, and that forms images on a recording medium; and a power source circuit board, 80 and 81, Col. 7 21-25, disposed inside the main casing, 2c, for outputting a drive voltage to drive the processing unit, 30, and overall control for the printer, 1, wherein the first surface, 74, of the main casing, 2c, is formed with a first exhaust outlet containing fan, 72, for exhausting air from the main casing, 2c; and the power source circuit board, 80 and 81, is disposed adjacent the same surface, 73, where the first exhaust outlet containing fan, 72, is mounted.

As for claim 18, Taki teaches in Figs. 3 and 4, an image forming device, 1, further comprising a drive motor associated with fan, 72, that generates a driving force, wherein the second surface, 70, of the main casing, 2c, is formed with an intake hole, indicated by arrow A, through which air is supplied into the main casing, 2c, the air flowing over the power source circuit board, 80 and 81, and being exhausted through the first exhaust outlet, associated with fan 74, the drive motor being disposed near the intake hole. Since the drive motor is considered to be in the device it can be considered "near" the intake hole.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 5, 6, 16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taki (5,887,226) in view of Ichinokawa et al. (5,452,072) further in view of In re Japikse, 86 USPQ 70.

As for claim 1, Taki teaches in Fig. 2 an image forming device, 1, comprising a main casing, 2, having a first surface, 74, and a second surface, 70, opposing the first surface, 74, a processing unit, 30, that is detachably mounted the main casing, 2, and that forms images on a recording medium, a first power source circuit board, 80, disposed inside the main casing, and a second power source circuit board, 83, disposed inside the main casing, the first surface, 74, is formed with a outlet exhausting the first

formed with a first exhaust outlet, 72, from the main casing. Taki remains silent regarding if the first power board circuit outputs a drive voltage to the processing unit, and if the components of the first power source circuit board generate larger amount of heat than the second power source circuit board power source circuit board.

Ichinokawa et al. teaches in Col. 20, lines 59 to Col. 21 line 6, a low voltage power board, 148, supplying power to a processing unit responsible for printing images on a medium, and which produces a large amount of heat during operation, requiring cooling effects from a discharge device, 150. It would have been obvious to one of ordinary skill in the art at the time of invention to include the low voltage board, 148, of Ichinokawa et al. to the image forming device of Taki because Ichinokawa et al. teaches it is common in the art of image forming devices to use low voltages boards which supply image forming units while requiring cooling effects from a cooling device.

Taki teaches in Fig. 3 an air flow, B, B' and B" starting from an area where the first power circuit board, 80, is located to an area where the second power board, 83, is located. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to reverse the positions of these two circuit boards, 80 and 83, since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70

As for claims 5 and 6, Taki teaches in Fig. 2 an image forming device, 1, further comprising a drive motor found in the cooling fan, 72, that generates a driving force, wherein the second surface, 70, of the main casing, 2, is formed with an intake hole through which air, A, is supplied into the main casing, 2c, along with vent, 71, the air

flowing over the first power source circuit board, 80, and being exhausted through the first exhaust outlet, 74, the drive motor being disposed near the intake hole. Since the drive motor is considered to be in the device it can be considered "near" the intake hole.

As for claims 16 and 19, Taki teaches all that is claimed in the above rejection of claim 15, and a high-power voltage source circuit, 83, disposed below the processing unit, 30, as seen in Fig. 1, the high-voltage power source circuit, 83, outputting a drive voltage of a higher voltage than the drive voltage outputted by the power source circuit board, 80 and 81. Taki remains silent regarding if the power sources circuit board generates a greater amount of heat that the high-voltage power source circuit board.

Ichinokawa et al. teaches in Col. 20, lines 59 to Col. 21 line 6, a low voltage power board, 148, similar to the power source circuit board taught by Taki, supplying power to a processing unit responsible for printing images on a medium, and which produces a large amount of heat during operation, requiring cooling effects from a discharge device, 150. It would have been obvious to one of ordinary skill in the art at the time of invention to include the power source circuit board board, 148, of Ichinokawa et al. to the image forming device of Taki because Ichinokawa et al. teaches it is common in the art of image forming devices to use low voltages boards which supply image forming units while requiring cooling effects from a cooling device.

Taki teaches in Fig. 3 the high voltage power source circuit board closer to the outlet at 72 than the power source circuit board, 80 and 81. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to

reverse the positions of these circuit boards since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70

Claims 2-4 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taki (5,887,226), Ichinokawa et al. (5,452,072) and In re Japikse, 86 USPQ 70, further in view of JP 2002-189320.

Taki teaches all that is claimed, as discussed in the above rejection of claims 1, and 15 and wherein the second power source is a high voltage power source circuit board, 83,except the first power source circuit board comprising a transformer and a regulator and heat dissipating plates.

JP 2002-189320 teaches an image forming device, Fig. 2, wherein the components of the first power source circuit board, 80 include at least one of a transformer and a regulator (See paragraphs 0028 and 0030) and wherein the first power source circuit board has heat dissipating plates that dissipate heat generated by the components the first power source circuit board, the heat dissipating plates being disposed such that a largest surface of each heat dissipating plate disposed along the air passage direction (See paragraphs 0028 to 0030). It would have been obvious to modify Taki to have a first power source circuit board comprising a transformer and a regulator and heat dissipating plates as taught by JP 2002-189320 to proyide an advantageous means for releasing the heat from the circuit board.

Claims 7-13, are rejected under 35 U.S.C. 103(a) as being unpatentable over Taki (5,887,226), Ichinokawa et al. (5,452,072), and In re Japikse, 86 USPQ 70 further in view of Kida et al. (6,173, 132).

As for claims, 7-13 Taki, Ichinokawa et al., and In re Japikse, 86 USPQ 70 teach all that is claimed in the above rejection of claim 6 and wherein Fig. 2 of Taki, the image forming device, 1, comprises a conveying unit, 14, and a fixing unit, 50, disposed downstream of the processing unit, 30, in the conveying direction of the medium, and a first partitioning wall, 2b, wherein the main casing, 2c, defines an internal space, and the first partitioning wall, 2b, separates the internal space into a first air path, seen in Fig. 5, with arrows showing the air flow, formed by the first fan, 72, a second partitioning wall, 91, wherein the second partitioning wall, 91, includes two walls, 90 and 76a, disposed between the fixing unit, 50, and the processing unit, 30, the two walls defining an air passage, 76, therebetween, and the second partitioning wall, 91, partitions the internal space into a third air path, defined as B', on the processing unit, 30, side and fourth air path, D, of the fixing unit, 50, side, as seen in Fig. 8. Taki, Ichinokawa et al., and In re Japikse, 86 USPQ 70 fail to teach a second fan disposed in confrontation with the second exhaust outlet of the main casing above the fixing unit, 50.

Kida et al. teaches in Fig. 2 an image forming device containing a second fan, FA2, above affixing unit, 49, in confrontation with an exhausting port in which the fan, FA2, is mounted. It would have been obvious to one of ordinary skill in the art at the time of invention to modify Taki to include the fan, FA2, of Kida et al. because it adds additional cooling to the system.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Taki (5,887,226), Ichinokawa et al. (5,452,072), In re Japikse, 86 USPQ 70, and Kida et al. (6,173, 132) further in view of Nanjo (6,522,847).

As for claim 14, Taki, Ichinokawa et al. and Kida et al. teach all that is rejected above in claim 13, except where the device further comprises an ozone filter.

Nanjo teaches in Fig. 1, an image forming apparatus where an ozone filter, 40, is disposed in an air path, 30. It would have been obvious to one of ordinary skill in the art at the time of invention to include the ozone filter, 40, of Nanjo because in Col. 4 lines 25-32 the remove of ozone from the device with prevent the image forming apparatus from becoming damaged, so that the life of the device can be further prolonged.

Claims 20-23, are rejected under 35 U.S.C. 103(a) as being unpatentable over Taki (5,887,226), and Ichinokawa et al. (5,452,072) as applied to claim 19, further in view of Kida et al. (6,173, 132).

As for claims, 20-23 Taki, and Ichinokawa et al., teach all that is claimed in the above rejection of claim 19 and wherein Fig. 2 of Taki, the image forming device, 1, comprises a conveying unit, 14, and a fixing unit, 50, disposed downstream of the processing unit, 30, in the conveying direction of the medium, and a first partitioning wall, 2b, wherein the main casing, 2c, defines an internal space, and the first partitioning wall, 2b, separates the internal space into a first air path, seen in Fig. 5, with arrows showing the air flow, formed by the first fan, 72, and a second partitioning wall, 91, wherein the second partitioning wall, 91, includes two walls, 90 and 76a, disposed between the fixing unit, 50, and the processing unit, 30, the two walls defining an air passage, 76, therebetween, and the second partitioning wall, 91, partitions the internal space into a third air path, defined as B', on the processing unit, 30, side and fourth air path, D, of the fixing unit, 50, side, as seen in Fig. 8. Taki and Ichinokawa et al. fail to

teach a second fan disposed in confrontation with the second exhaust outlet of the main casing above the fixing unit, 50.

Kida et al. teaches in Fig. 2 an image forming device containing a second fan, FA2, above affixing unit, 49, in confrontation with an exhausting port in which the fan, FA2, is mounted. It would have been obvious to one of ordinary skill in the art at the time of invention to modify Taki to include the fan, FA2, of Kida et al. because it adds additional cooling to the system.

Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taki (5,887,226), Ichinokawa et al. (5,452,072), and Kida et al. (6,173, 132) further in view of Nanjo (6,522,847).

As for claims 24 and 25, Taki, Ichinokawa et al. and Kida et al. teach all that is rejected above in claim 23, and where a first and second frame, 64 and 61, are taught by Kida et al., where the first and second fans are mounted on the first frame, 64, the partitioning, 2b, taught by Taki expands the main casing, where the processing unit and fixing unit, 30 and 50, are located above the partitioning wall, 2b, and the power source circuit, 80 and 81, are disposed beneath the first partitioning wall, 2b, the second fan, FA2 of Kida et al. is found above the partitioning wall closer the processing unit and fixing unit; however, they fail to teach the device further comprises an ozone filter.

Nanjo teaches in Fig. 1, an image forming apparatus where an ozone filter, 40, is disposed in an air path, 30. It would have been obvious to one of ordinary skill in the art at the time of invention to include the ozone filter, 40, of Nanjo because in Col. 4 lines

25-32 the remove of ozone from the device with prevent the image forming apparatus from becoming damaged, so that the life of the device can be further prolonged.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew G. Marini whose telephone number is (571)-272-2676. The examiner can normally be reached on Monday-Friday 8:00 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571)-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Matthew Marini
06/12/07

/Ren Yan/
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Primary Examiner
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